Fig. 1

Fig. 2

10

12 — Front End

Preservation request

Input data

Preview

24 — Request Handling/Data Routing

18 — Preservation Apparatus

26 — Data Processing

30 — Indexing Database

20 — Control Logic Processor

70 — Media Source

40 — Imager

42

44 — Media Processor (optional)

50 — Physical Storage

preserved image

Legend

Human intervention (optional)

Fig. 3

10

12
26
30
20
50
62
18
60

Data Processing

Indexing Database

Control Logic Processor

Physical Storage

preserved image

Data Recovery

Preservation Apparatus

Retrieval Handling

Front End

Retrieval request

Retrieved Data

Legend

Human intervention (optional)

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
    <xsd:element name="PRESERVATION_CONTENT">
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element name="PRESERVATION_RECORD_INDEX" minOccurs="0" maxOccurs="unbounded">
                    <xsd:complexType>
                        <xsd:sequence>
                            <xsd:element name="LOGICAL">
                                <xsd:complexType>
                                    <xsd:sequence>
                                        <xsd:element name="FILE_NAME" type="xsd:string"/>
                                        <xsd:element name="FILE_TYPE" type="xsd:string" minOccurs="0"/>
                                        <xsd:element name="OWNERSHIP" type="xsd:string" minOccurs="0"/>
                                        <xsd:element name="DATE_TIME_PRESERVED" type="xsd:dateTime"/>
                                        <xsd:element name="EXPIRATION_DATE" type="xsd:dateTime" minOccurs="0"/>
                                        <xsd:element name="SOURCE_IDENTIFIER" type="xsd:string"/>
                                        <xsd:element name="ORIGINATING_SOFTWARE" minOccurs="0">
                                            <xsd:complexType>
                                                <xsd:sequence>
                                                    <xsd:element name="NAME" type="xsd:string"/>
                                                </xsd:sequence>
                                                <xsd:attribute name="VERSION" type="xsd:decimal" use="optional"/>
                                            </xsd:complexType>
                                        </xsd:element>
                                        <xsd:element name="SCANNER_PERIPHERAL" minOccurs="0">
                                            <xsd:complexType>
                                                <xsd:sequence>
                                                    <xsd:element name="MANUFACTURE" type="xsd:string"/>
                                                    <xsd:element name="MODEL" type="xsd:string"/>
                                                </xsd:sequence>
                                            </xsd:complexType>
                                        </xsd:element>
                                    </xsd:sequence>
                                </xsd:complexType>
                            </xsd:element>
                            <xsd:element name="PHYSICAL">
                                <xsd:complexType>
                                    <xsd:sequence>
                                        <xsd:element name="FILE_SIZE" type="xsd:double"/>
                                        <xsd:element name="ROLE_NUMBER" type="xsd:string"/>
                                        <xsd:element name="FRAME_NUMBER" type="xsd:unsignedLong"/>
                                        <xsd:element name="FRAME_ASSOCIATION" type="xsd:string"/>
                                    </xsd:sequence>
                                </xsd:complexType>
                            </xsd:element>
                        </xsd:sequence>
                        <xsd:attribute name="Unique_ID" type="xsd:string"/>
                    </xsd:complexType>
                </xsd:element>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>
</xsd:schema>
```
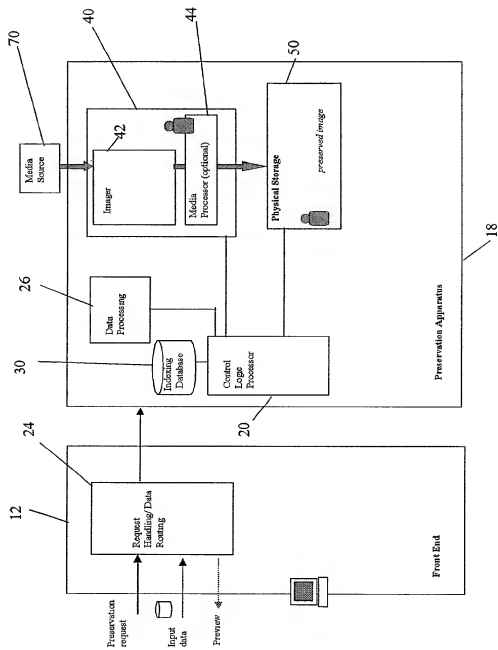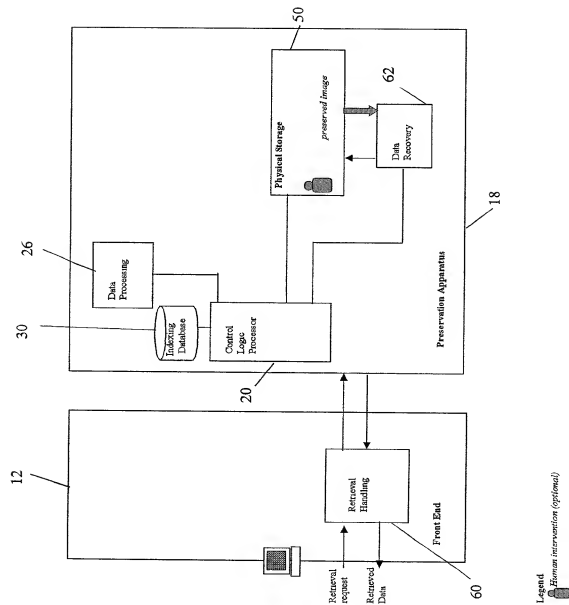
Fig. 4

```xml
<?xml version="1.0" encoding="UTF-8"?>
<PRESERVATION_CONTENT xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="C:\PreservationXML\Preservation_Index.xsd">
<PRESERVATION_RECORD_INDEX Unique_ID="6d85c7f291296a49df987680b271c5b9">
    <LOGICAL>
        <FILE_NAME>Court record 7-528-257.tif</FILE_NAME>
        <FILE_TYPE>TIFF 6.0</FILE_TYPE>
        <OWNERSHIP>Eastman Kodak Company</OWNERSHIP>
        <DATE_TIME_PRESERVED>2001-04-19T13:20:00.000-05:00</DATE_TIME_PRESERVED>
        <EXPIRATION_DATE>2021-04-19T13:20:00.000-05:00</EXPIRATION_DATE>
        <SOURCE_IDENTIFIER>Scanner</SOURCE_IDENTIFIER>
        < ORIGINATING_SOFTWARE VERSION="2.02">
            <NAME>Preservation Record Management Prototype</NAME>
        </ORIGINATING_SOFTWARE>
        <SCANNER_PERIPHERAL>
            <MANUFACTURE>Eastman Kodak</MANUFACTURE>
            <MODEL>HR200</MODEL>
        </SCANNER_PERIPHERAL>
    </LOGICAL>
    <PHYSICAL>
        <FILE_SIZE>156829</FILE_SIZE>
        <ROLE_NUMBER>6B29FC40-CA47-1067-B31D-00DD010662DA</ROLE_NUMBER>
        <FRAME_NUMBER>7521</FRAME_NUMBER>
        <FRAME_ASSOCIATION>1 of 1</FRAME_ASSOCIATION>
    </PHYSICAL>
</PRESERVATION_RECORD_INDEX>
</PRESERVATION_CONTENT>
```
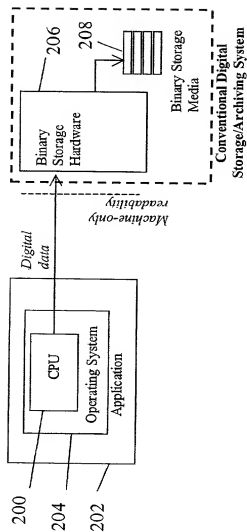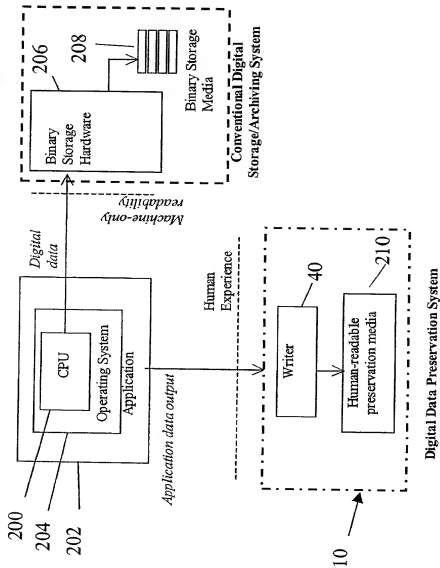
Fig. 5

Fig. 6

Fig. 7

Conventional Digital Storage/Archiving System

206 — Binary Storage Hardware

208 — Binary Storage Media

Machine-only readability

Digital data

200
204
202

CPU

Operating System

Application

Application data output

Human Experience

40 — Writer

210 — Human-readable preservation media

Digital Data Preservation System

10

```xml
<FRAME_INDEX ID="6d85c7f291296a49df987680b271c5b9">
        <LOGICAL>
                <FILE_NAME>Court record 7-528-257.tif</FILE_NAME>
                <FILE_TYPE>TIFF 6.0</FILE_TYPE>
        </LOGICAL>
        <PHYSICAL>
                <ROLE_NUMBER>6B29FC40-CA47-1067-B31D-00DD010662DA</ROLE_NUMBER>
                <FRAME_NUMBER>7521</FRAME_NUMBER>
                <FRAME_ASSOCIATION>1 of 1</FRAME_ASSOCIATION>
        </PHYSICAL>
</FRAME_INDEX>
<FRAME_INDEX ID="8f91d9a180187b38eg796689c382b8g7">
        <LOGICAL>
                <FILE_NAME>Court record 5-128-257.tif</FILE_NAME>
                <FILE_TYPE>TIFF 6.0</FILE_TYPE>
        </LOGICAL>
        <PHYSICAL>
                <ROLE_NUMBER>6B29FC40-CA47-1067-B31D-00DD010662DA</ROLE_NUMBER>
                <FRAME_NUMBER>7522</FRAME_NUMBER>
                <FRAME_ASSOCIATION>1 of 1</FRAME_ASSOCIATION>
        </PHYSICAL>
</FRAME_INDEX>
<FRAME_INDEX ID="9f73r5t290265r28wx607793y222c6w4">
        <LOGICAL>
                <FILE_NAME>Court record 5-128-258.tif</FILE_NAME>
                <FILE_TYPE>TIFF 6.0</FILE_TYPE>
        </LOGICAL>
        <PHYSICAL>
                <ROLE_NUMBER>6B29FC40-CA47-1067-B31D-00DD010662DA</ROLE_NUMBER>
                <FRAME_NUMBER>7523</FRAME_NUMBER>
                <FRAME_ASSOCIATION>1 of 1</FRAME_ASSOCIATION>
        </PHYSICAL>
</FRAME_INDEX>
```

Fig. 8a

```
<FRAME_INDEX ID="6d85c7f291296a49df987680b271c5b9">
        <LOGICAL>
                <FILE_NAME>Court record 7-528-257.tif</FILE_NAME>
                <FILE_TYPE>TIFF 6.0</FILE_TYPE>
        </LOGICAL>
        <PHYSICAL>
                <ROLE_NUMBER>6B29FC40-CA47-1067-B31D-00DD010662DA</ROLE_NUMBER>
                <FRAME_NUMBER>7521</FRAME_NUMBER>
                <FRAME_ASSOCIATION>1 of 1</FRAME_ASSOCIATION>
        </PHYSICAL>
</FRAME_INDEX>
```

```
<FRAME_INDEX ID="9f73r5t290265r28wx607793y222c6w4">
        <LOGICAL>
                <FILE_NAME>Court record 5-128-258.tif</FILE_NAME>
                <FILE_TYPE>TIFF 6.0</FILE_TYPE>
        </LOGICAL>
        <PHYSICAL>
                <ROLE_NUMBER>6B29FC40-CA47-1067-B31D-00DD010662DA</ROLE_NUMBER>
                <FRAME_NUMBER>7523</FRAME_NUMBER>
                <FRAME_ASSOCIATION>1 of 1</FRAME_ASSOCIATION>
        </PHYSICAL>
</FRAME_INDEX>
```

Fig. 8b